

# Lewis dot, Ionic and Covalent Bonding REVIEW

## 1) DRAW THE BONDING PICTURES OF THE FOLLOWING COMPOUNDS.

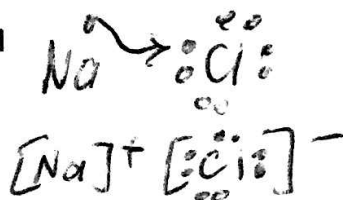
1. DRAW THE LEWIS DOT STRUCTURE FOR EACH ELEMENT.

2. SHOW THE ELECTRON FLOW WITH ARROWS.

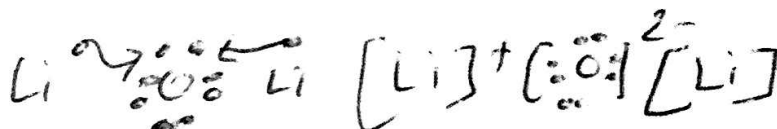
3. DRAW THE FINAL COMPOUND BONDED TOGETHER.

4. IF THE COMPOUND IS SHARING THE ELECTRONS, NOTE THAT BY CIRCLING THE SHARED ELECTRONS!

a) NaCl



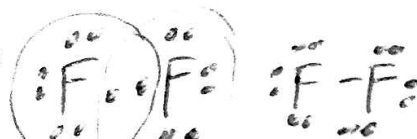
c) Li<sub>2</sub>O



b) H<sub>2</sub>O



d) F<sub>2</sub>



2) What is the charge of Oxygen if it loses 3 electrons?

A. 1+

B. 3+ ☒

C. 2-

D. 3- ☒

3) How many total electrons does Ca<sup>3+</sup> have?

A. 21

B. 17

C. 20

D. 23 ☒

IDENTIFY THE FOLLOWING COMPOUNDS AS EITHER HAVING  
IONIC BONDING OR COVALENT BONDING

4) H<sub>2</sub>O C

5) NaCl I

6) O<sub>2</sub> C

7) MgCl<sub>2</sub> I

8) Li<sub>2</sub>O I

9) CH<sub>4</sub> C

10) CaO I

11) Which families on the periodic table tend to accept electrons? (More than one possible)

- a. The Alkali Metals (group 1)
- b. The Alkaline Earth Metals (group 2)
- c. ☒ The Halogens (group 17)
- d. ☒ The Oxygen Family (group 16)

12) An Ionic bond can be defined as:

- a. The bonding of a metal and a non-metal that shares electrons.
- b. ☒ The bonding of a metal and a non-metal that give/ transfer electrons.
- c. The bonding of a non-metal and a non-metal that give/ transfer electrons.

13) A Covalent bond can be defined as:

- a. The bonding of a metal and a non-metal that give/ transfer electrons.
- b. ☒ The bonding of a non-metal and a non-metal that shares electrons.
- c. The bonding of a non-metal and a non-metal that give/ transfer electrons.

14) Gasoline would be an example of a C bond because.....

1. FLAMMABLE
2. LIQUID @ ROOM TEMP

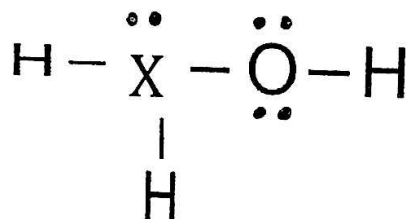
15) Chalk would be an example of a I bond because...

1. BRITTLE
2. DISSOLVES IN WATER

16) Why do  $\text{Co}_2\text{O}_3$  and  $\text{CoO}$  have different formulas even though they are made up of the same type of atoms?

CO IS A TRANSITION METAL  
AND CAN HAVE DIFFERENT OXIDATION #'S

17) If you had this structure, what is element X most likely to be?

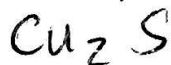
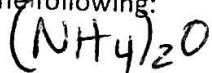


- a) Carbon b) Sodium c) Potassium d) Nitrogen

18) Explain using the word electronegativity why non-metals bond covalently with non-metals and metals bond ionically with non-metals

19) Write the formulas for the following:

- a) ammonium oxide
- b) copper(I) sulfide
- c) iron (II) hydroxide



20) Name the following compounds:

- a)  $\text{Co}_2\text{O}_3$  cobalt oxide
- b)  $\text{KPO}_4$  potassium phosphate
- c)  $\text{Ca}(\text{C}_2\text{H}_3\text{O}_2)_2$  calcium acetate